

**TITLE:** DETECTION OF VIRULENCE GENES IN ESBL STRAINS OF MORGANELLA MORGANII ISOLATED FROM HOSPITAL IN THE CITY OF LONDRINA-PARANÁ, BRAZIL.

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**ABSTRACT:**

*Morganella morganii* is an enterobacterium found in the intestine of humans and in the environment, being considered an opportunistic or nosocomial pathogen. It is considered as a potentially emerging pathogen. Bacteria producing  $\beta$ -lactamases in addition to conferring the phenomenon of resistance to  $\beta$ -lactam antibiotics, they may also be resistant to other antibiotics such as aminoglycosides, quinolones and others. Thus, we conducted a study to investigate the prevalence of virulence genes (*zapA*, *mrpA*, *fimH*, *iutA*, *ireA*, *hlyA*, *shlA*, *tibA* e *invA*) in extended-spectrum  $\beta$ -lactamases (ESBL) strains in clinical isolates of *M. morganii* in Londrina, Paraná, from 2015 to 2019. A total of 26 clinical isolates from urine, tissue, bone fragment, eye swab, tracheal secretion, and bronchial aspirate were analyzed using Polymerase Chain Reaction (PCR), the amplification products were submitted to agarose gel electrophoresis. The genes identified with prevalence in virulence in hospital ESBL refer to 1 strain (4%) *invA* (adhesin), 1 (4%) *tibA* (adhesin), 2 (7.69) *hlyA* (hemolysin), 10 (30.76%) *shlA* (hemolysin), 23 (88.46%) *mrpA* (fimbriae), 24 (92.30%) *ireA* (siderophore), 25 (96.15%) *zapA* (protease), 26 (100%) *iutA* (siderophore) and finally 26 (100%) *fimH* (fimbriae). In conclusion, 100% of the strains were positive for *iutA* and *fimH* (which contributes to surface adhesion). With the present work, it is concluded that there are virulence factors expressed in ESBL *M. morganii* strains that contribute to the pathogenicity of this microorganism. This data is worrying because the presence of genes associated with virulence in  $\beta$ -lactamase-producing strains that are resistant to antibiotics causes risks in hospital infections.

**Keywords:**  $\beta$ -lactamases, virulence, PCR, hospital, *Morganella morganii*

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